

IN THE CLAIMS

1. (Currently Amended) A semiconductor laser light emitting device comprising:
a stacked film composed of a stack of group III nitride semiconductor films each containing at least one kind selected from aluminum, gallium, indium, and boron;
wherein,
an upper portion of said stacked film is formed into a ridge-like stripe, to form a current injection region;
a current injection width W_{st} of said current injection region is at a value in a range of 1 $\mu\text{m} \leq W_{st} \leq 3 \mu\text{m}$,
a current non-injection region formed on both sides of said ridge-like strip;
at least part of said current non-injection region is made from a material expressed by a chemical formula $[\text{Al}_x\text{Ga}_{1-x}\text{N}] \text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1.0$);
the component ratio “x” of $[\text{Al}] \text{Al}$ is at a value in a range of $0.3 \leq x \leq 1.0$, so that said semiconductor laser light emitting device is configured as an index guide type semiconductor laser light emitting device; and
a film located between an active layer and the current non-injection region of the stacked film made from a material expressed by a chemical formula $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0.3 \leq x \leq 1.0$) and has a thickness of less than 0.2 μm [or less] but greater than zero.
2. (Cancelled).

3. (Cancelled).

4. (Cancelled).

5. (Original) A semiconductor laser light emitting device according to claim 1, wherein a difference Δn between an effective refractive index $n1$ of said current injection region in the film stacking direction and an effective refractive index $n2$ of said current non-injection region in the film stacking direction is in a range of $0.007 \leq \Delta n = (n1-n2) \leq 0.012$.

6. (Currently Amended) A semiconductor laser light emitting device according to claim [2]1, wherein a difference Δn between an effective refractive index $n1$ of said current injection region in the film stacking direction and an effective refractive index $n2$ of said current non-injection region in the film stacking direction is in a range of $0.007 \leq \Delta n = (n1-n2) \leq 0.012$.

7. (Cancelled).

8. (Currently Amended) A semiconductor laser light emitting device according to claim [4]1, wherein a difference Δn between an effective refractive index $n1$ of said current injection region in the film stacking direction and an effective refractive index $n2$ of said current non-injection region in the film stacking direction is in a range of $0.007 \leq \Delta n = (n1-n2) \leq 0.012$.

9. (Currently Amended) A semiconductor laser light emitting device comprising:
a stacked film composed of a stack of group III nitride semiconductor films each
containing at least one kind selected from aluminum, gallium, indium, and boron;
wherein,
an upper portion of said stacked film is formed into a ridge-like stripe, to form a current
injection region;
a current injection width W_{st} of said current injection region is at a value in a range of 1
 $\mu\text{m} \leq W_{st} \leq 3 \mu\text{m}$,
a current non-injection region formed on both sides of said ridge-like strip; and
at least part of said current non-injection region is made from a material expressed by a
chemical formula $[\text{Al}_x\text{Ga}_{1-x}\text{N}] \text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1.0$);
the component ratio “x” of $[\text{Al}] \text{Al}$ is at a value in a range of $0.15 < x < 0.30$,
so that said semiconductor laser light emitting device is configured as a weak index type
pulsation semiconductor laser light emitting device; and
a film located between an active layer and the current non-injection region of the stacked
film made from a material expressed by a chemical formula $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0.15 \leq x \leq 0.30$) and
has a thickness of less than $0.2 \mu\text{m}$ [or less] but greater than zero.

10. (Cancelled).

11. (Cancelled).

12. (Cancelled)

13. (Original) A semiconductor laser light emitting device according to claim 9, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

14. (Currently Amended) A semiconductor laser light emitting device according to claim [10] 9, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

15. (Cancelled).

16. (Currently Amended) A semiconductor laser light emitting device according to claim [12] 9, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

17. (Currently Amended) A semiconductor laser light emitting device comprising:
a stacked film composed of a stack of group III nitride semiconductor films each containing at least one kind selected from aluminum, gallium, indium, and boron;

wherein,

an upper portion of said stacked film is formed into a ridge-like stripe, to form a current injection region;

a current injection width W_{st} of said current injection region is at a value in a range of $1 \mu\text{m} \leq W_{st} \leq 3 \mu\text{m}$,

a current non-injection region formed on both sides of said ridge-like strip; and
at least part of said current non-injection region is made from a material expressed by a chemical formula $[\text{Al}_x\text{Ga}_{1-x}\text{N}] \text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 1.0$);

the component ratio “x” of $[\text{Al}] \text{Al}$ is at a value in a range of $0 \leq x \leq 0.15$,
so that said semiconductor laser light emitting device is configured as a gain type laser light emitting device; and

a film located between an active layer and the current non-injection region of the stacked film made from a material expressed by a chemical formula $\text{Al}_x\text{Ga}_{1-x}\text{N}$ ($0 \leq x \leq 0.15$) and has a thickness of less than $0.2 \mu\text{m}$ [or less] but greater than zero.

18. (Cancelled).

19. (Cancelled).

20. (Cancelled).

21. (Original) A semiconductor laser light emitting device according to claim 17, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

22. (Currently Amended) A semiconductor laser light emitting device according to claim [18] 17, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

23. (Cancelled).

24. (Currently Amended) A semiconductor laser light emitting device according to claim [20] 17, wherein a difference Δn between an effective refractive index n_1 of said current injection region in the film stacking direction and an effective refractive index n_2 of said current non-injection region in the film stacking direction is in a range of $0 < \Delta n = (n_1 - n_2) < 0.007$.

25. (New) A semiconductor laser light emitting device comprising:
a stack of group III nitride semiconductor films each comprising at least one element selected from the group of aluminum, gallium, indium, and boron;
an upper portion of said stacked film forming a ridge-like stripe for a current injection region;

a current non-injection region formed on both sides of said ridge-like strip, wherein at least part of said current non-injection region is made from a material expressed by a chemical formula $Al_xGa_{1-x}N$ ($0 \leq x \leq 1.0$), and wherein the component ratio “x” of Al is between 0.3 and 1.0; and

a p-side electrode is formed on and in contact with the current non-injection region.

26. (New) A semiconductor laser light emitting device comprising:

a stack of group III nitride semiconductor films each comprising at least one element selected from the group of aluminum, gallium, indium, and boron;

an upper portion of said stacked film forming a ridge-like stripe for a current injection region;

a current non-injection region formed on both sides of said ridge-like strip, wherein at least part of said current non-injection region is made from a material expressed by a chemical formula $Al_xGa_{1-x}N$ ($0 \leq x \leq 1.0$), and wherein the component ratio “x” of Al is between 0.3 and 1.0; and

a contact layer formed in between the current non-injection region.

27. (New) A semiconductor laser light emitting device according to claim 26, wherein the contact layer is formed on the ridge-like stripe.

28. A semiconductor laser light emitting device according to claim 27, wherein the contact layer is in contact with the ridge-like stripe.

29. (New) A semiconductor laser light emitting device according to claim 26, further comprising a p-side electrode is formed on and in contact with the contact layer.

30. (New) A semiconductor laser light emitting device comprising:
a stack of group III nitride semiconductor films each comprising at least one element selected from the group of aluminum, gallium, indium, and boron;
an upper portion of said stacked film forming a ridge-like stripe for a current injection region;
a current non-injection region formed on both sides of said ridge-like strip, wherein at least part of said current non-injection region is made from a material expressed by a chemical formula $Al_xGa_{1-x}N$ ($0 \leq x \leq 1.0$); and
a film located between an active layer and the current non-injection region of the stacked film made from a material expressed by a chemical formula $Al_xGa_{1-x}N$ ($0.15 \leq x \leq 0.30$) and having a thickness of less than $0.2 \mu m$ but greater than zero.